IN THE CLAIMS:

1. (Currently amended): An apparatus for controlling a fingerprint sensor temperature, comprising:

a power source;

a temperature sensor for detecting the fingerprint sensor temperature;

a semiconductor assembly interposed between the fingerprint sensor and the power source for cooling or heating the fingerprint sensor according to a direction of a [[the]] current from the power source; and

a controller controlling the power source based on the fingerprint sensor temperature, [[.]]

wherein the semiconductor assembly comprises an n-type semiconductor, a p-type semiconductor, an electrode for conjunction between the n-type semiconductor and the p-type semiconductor, two counter electrodes respectively connected to the power source in series, and an intermediate element for heat transfer between the electrode and the fingerprint sensor.

2. (Original): The apparatus of claim 1, wherein the power source comprises a DC source.

3. (Cancelled)

4. (Currently amended): The apparatus of claim 1 [[3]], wherein the intermediate element is formed with silicon.

5. (Currently amended): The apparatus of claim 1 [[4]], wherein:

in the case that the detected fingerprint sensor temperature is within a predetermined temperature range, the controller controls the power source to be off;

in the case that the detected fingerprint sensor temperature is higher than a [[the]] highest temperature of the predetermined temperature range, the controller controls the power source to supply a reverse bias current to the semiconductor assembly; and

in the case that the detected fingerprint sensor temperature is lower than a [[the]] lowest temperature of the predetermined temperature range, the controller controls the power source to supply a forward bias current to the semiconductor assembly.

6. (Original): The apparatus of claim 5, wherein the predetermined temperature range includes 25℃ to 37℃.

7. (Original): The apparatus of claim 1, further comprising a door unlock sensor, wherein the controller connects the power source to the semiconductor assembly only if a door unlock signal is detected by the door unlock sensor.

8. (Original): A method for controlling a fingerprint sensor temperature, utilizing a thermoelectric semiconductor assembly connected to a power source, comprising:

detecting the fingerprint sensor temperature, determining whether the detected fingerprint sensor temperature is within a predetermined temperature range;

cutting off the power source to the semiconductor assembly if the detected fingerprint sensor temperature is within the predetermined temperature range;

applying a reverse bias current to the semiconductor assembly from the power source if the detected fingerprint sensor temperature is higher than the highest temperature of the predetermined temperature range; and

applying a forward bias current to the semiconductor assembly from the power source if the detected fingerprint sensor temperature is lower than the lowest temperature of the predetermined temperature range.

9. (Original): The method of claim 8, further comprising detecting a door unlock signal before detecting the fingerprint sensor temperature, wherein the semiconductor assembly is connected to the power source if the door unlock signal is detected.

10. (Original): The method of claim 8, wherein the power source is a DC source.

11. (Original): The method of claim 8, wherein the semiconductor assembly is a thermoelectric semiconductor assembly.

12. (Original): An apparatus for controlling temperature of a fingerprint sensor, comprising:

a power source;

a temperature sensor configured to sense temperature at the fingerprint sensor;

a semiconductor assembly configured and dimensioned to be disposed between the fingerprint sensor and said power source;

a controller communicating with said power source and receiving signals from said temperature sensor, said controller being programmed to turn off the power source when the sensed temperature is within a predetermined range, supply a reverse bias current from the power source to the semiconductor assembly when the sensed temperature is higher than the predetermined range; and supply a forward bias current from the power source to the semiconductor assembly when the sensed temperature is lower than the predetermined range.

13. (Original): The apparatus of claim 12, wherein said semiconductor assembly comprises a thermoelectric semiconductor assembly and the power source is a DC power source.

14. (Original): The apparatus of claim 12, wherein said semiconductor assembly comprises:

an n-type semiconductor;

a p-type semiconductor;

an electrode extending between said semiconductors;

an intermediate element formed on said electrode and configured for contact with the fingerprint sensor; and

a counter electrode connected between each semiconductor and the power source.

15. (Original): The apparatus of claim 14, wherein said intermediate layer is a silicon layer for facilitating heat transfer.